Amendments to the Drawings:

Replace Figure 1 with the attached replacement Figure 1. The replacement figure corrects the lettering and numbering as required by the Office Action.

Attachment: Replacement Sheet

REMARKS/ARGUMENTS

If the Examiner believes that there are any unresolved issues in any of the claims now pending in the application, the Examiner is urged to telephone George Wolken Jr., Esq. at (408) 567-0340 so that appropriate arrangements can be made for resolving such issues as expeditiously as possible.

Drawings

A Replacement Figure 1 is attached hereto meeting the Examiner's objection in paragraph 1, page 2 of the Office Action dated 4/1/2005.

Amendments to the Specification

The amendments to paragraph [0001] correct an obvious typographical error and, as corrected, refer to the proper application from which the present application is a continuation-in-part.

The amendments to paragraphs [0007] and [00044] correct obvious grammatical errors.

Attachment A, pages 42 through 129 have been canceled from the application, meeting the Examiner's objections in Paragraph 2, page 2 of the Office Action dated 4/1/2005. A marked-up specification and Substitute Specification is attached hereto including the above

amendments. The Substitute Specification contains no new matter.

Claim Amendments

In view of the amendments presented above and the following discussion, the applicants submit that none of the claims now pending in the application are anticipated or otherwise unpatentable. Furthermore, the applicants also submit that all pending claims now satisfy the requirements of 35 USC § 112. Thus, the applicants believe that all of claims are now allowable.

Rejections under 35 U.S.C. § 112

The new independent claims 22 and 27 use "the neutral antisite defects" replacing "the uncharged antisite defect" to which the Examiner raised objections under 35 USC § 112. The use of "neutral antisites" is supported by paragraph [00044] of the specification, among other places in both original and substitute specifications.

As the Examiner points out, "balanced" is defined in the specification in relation to antisites, and "antisites" is now contained in all claims in which "balanced" also occurs.

Product-by-process claim 21 has been canceled.

New claims 26 and 31 are supported by the processing parameters given in paragraph [00041], including

a lower doping temperature limit of approximately 230°C (rather than 250°C), supported by the subject matter in paragraph [00054] and Fig. 3.

The carrier trapping times of claim 31 derive from Table I, page 20 and 21 in which 5.5 picoseconds is the longest trapping time reported.

Rejections under 35 U.S.C. § 102

All claims presently pending in this application call for balanced acceptor doping (claim 22, lines 8-9, claim 27 lines 8-9 and all claims dependent thereon). Applicants respectfully submit that, while prior art references may have fortuitously encompassed "balanced" conditions, such were not recognized nor taught in the prior art as being especially effective or desirable in producing the advantageous semiconductor properties claimed herein. MPEP § 2143.03 requires "To establish *prima facia* obviousness of the clamed invention, all the claim limitations must be taught or suggested in the prior art. ... All words of a claim must be considered in judging the patentability of that claim against the prior art." (citations omitted). While MPEP § 2143.03 strictly relates to obviousness under 35 USC § 103, applicants respectfully submit that no lesser a standard applies in determining anticipation under 35 USC § 102. Applicants further submit that "balanced" is not taught or suggested in the prior art, rendering claims 22-31 patentable.

Applicants also respectfully submit that the Doctrine of Inherency does not render claims 22-31 unpatentable since MPEP § 2112 argues strongly for the patentability of the pending claims in Section IV thereof stating "The fact that a certain result may occur or be present in the prior art is not sufficient to establish the inherency of that result or characteristic." (emphasis in MPEP). Also in MPEP § 2112 (IV), citing , *In re Oelrich* 666 F.2d 578, 212 USPQ 323, "...[to reject claims on the basis of inherency] the extrinsic evidence must make clear that the missing descriptive matter is necessarily present in the thing described in the reference and that it would have been so recognized by persons of ordinary skill in the art." And citing *In re Robertson* 169 F.3d 743, 49 USPQ2d 1949, "the mere fact that a certain thing may result from a given set of circumstances is not sufficient." Thus, the fortuitous use of occasional balanced acceptor concentrations in the prior art is not sufficient to render the present claims unpatentable.

As noted above, prior art references include variation of acceptor concentrations along with variation of many other process parameters as part of research efforts to improve electrical, thermal and optical properties of compound semiconductors. However, MPEP 2112(IV) cites *In re Rijckaert* 9 F.3d 1531, 28 USPQ2d 1995 for the proposition that it is improper to reject patent claims when rejection of claims based on supposed inherency results from an optimization of parameters, not what was necessarily present in the prior art. (emphasis supplied). Applicants respectfully submit that balanced acceptor concentrations

were not necessarily present in the prior art and not recognized as advantageous until the invention of the present applicants, and under 35 USC § 103(a), the manner of making the present invention by the applicants shall not negative patentability.

Conclusion

In view of the above amendments and arguments, the applicants respectfully submit that none of the claims presently in the application are anticipated or otherwise rendered unpatentable. Consequently, the applicants believe that all claims are presently in condition for allowance. Accordingly, both reconsideration of this application and its swift passage to issue are earnestly solicited.

Respectfully submitted,

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